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ABSTRACT

Many states and local districts use career clusters as a means of broadening the focus of secondary education, particularly career and technical education, as preparation for both further education and work. One continuing trend in career clusters is sheer variety. Cluster frameworks vary in the number, nomenclature, and organization of clusters. Career clusters are used not only for organizing instructional programs and curricula but also for structuring career exploration and planning. Other issues in career clusters include crosswalking across cluster frameworks; outcomes; integrating academic, technical, and employability standards; and providing information on occupations included in clusters. The major portion of this publication consists of an annotated bibliography of 21 resources. (YLB)

**Career Clusters
Trends and Issues Alert No. 38**

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Career Clusters

Often originating in Tech Prep and School-to-Work, career clusters are in use in many states and local districts. The sunset of the School-to-Work Opportunities Act may be counterbalanced by continued work sponsored by the U.S. Department of Education's Office of Vocational and Adult Education (USED/OVAE), to develop frameworks for its Career Preparation Areas (CPAs). This *Alert* reviews current trends and issues in using career clusters as a means of broadening the focus of secondary education, particularly career and technical education, as preparation for both further education and work.

One continuing trend in career clusters is sheer variety. Cluster frameworks vary in the number, nomenclature, and organization of clusters. For example, Alaska had six Career Pathways (*Alignment to Standards* 2002), an Indiana career center organized eight Schools (*Century Gold* 2001-02), and Massachusetts used seven Career Clusters (*COP Developments* 2002). Likewise, career clusters are used not only for organizing instructional programs and curricula but also to structure career exploration and planning (e.g., *CareerZone* n.d.; *Michigan's Career Pathways* 2002).

Other issues in career clusters include crosswalking across cluster frameworks, especially to the 16 USED/OVAE CPAs (e.g., *Career Cluster Crosswalk* 2002); outcomes (e.g., Loesch-Griffin and Rye 2001; Rudy and Rudy 2001); integrating academic, technical, and employability standards (*Career Cluster Frameworks* 1998); and providing information on occupations included in clusters (*Occupational Guides by Interest Area* 2000). Some states provide specific guidance to local districts in setting up and using their own cluster frameworks (e.g., *Career Pathways* 2002a; *Guide to Selecting* 2002). In local districts, cluster frameworks often specify occupations and instructional programs included in clusters, as well as academic and occupational courses included in programs (e.g., *Career Pathways* 2002b).

Resources

Alignment to Standards. Juneau: Career & Technical Education, Alaska Department of Education & Early Development, 2002. <http://www.eed.state.ak.us/dls/cte/CrosswalkProject/crosswalk.html> Crosswalks national occupational skill standards; Alaska standards (reading, writing, math, science, content, employability, cultural), and all aspects of industry standards; nine USED/OVAE CPAs organize information on core and occupational standards, crosswalked to Alaska's six Career Pathways (Arts & Communication; Business, Management & Technology; Health Services; Human Services; Natural Resources; Industrial & Engineering Technology).

Background. Stillwater, OK: States' Career Clusters Initiative, 2002. <http://www.careerclusters.org/validation/cluster/Background.htm> Explains the public-private partnership sponsored by USED/OVAE to develop frameworks for 11 of the 16 USED/OVAE CPAs: Agriculture, Food & Natural Resources; Architecture & Construction; Business, Management & Administration; Education & Training; Finance; Government & Public Administration; Hospitality & Tourism; Human Services; Law, Public Safety & Security; Marketing, Sales & Service; Science, Technology, Engineering & Mathematics. Describes the Knowledge and Skills Structure being developed for each cluster (Cluster/Pathway Topics; Knowledge/Skill Statements; Performance Elements; Measurement Criteria); links to description of each cluster.

Career and Technical Education: Career Development. Providence: Career and Technical Education, Rhode Island Department of Elementary and Secondary Education, 2002. <http://www.ridoe.net/careerdev/careerdevelopment.htm>

Defines career clusters; identifies 16 career clusters adopted by Rhode Island: Agriculture & Natural Resources; Architecture & Construction; Arts, A/V Technology & Telecommunications; Business & Administration; Education & Training; Finance; Government & Public Administration; Health Science; Hospitality & Tourism; Human Services; Information Technology; Law & Public Safety; Manufacturing; Retail/Wholesale Sales & Service; Scientific Research & Engineering; Transportation, Distribution & Logistics.

Career Cluster Crosswalk. Stillwater: Guidance Division, Oklahoma Department of Career and Technology Education, 2002. <http://www.okcareertech.org/guidance/crosswalk.htm>

Provides a crosswalk among 13 Oklahoma Career Search Clusters (Agriculture; Business; Construction; Design, Communication & Arts; Education; Health; Manufacturing; Personal Service; Repairs & Mechanics; Sales & Marketing; Science & Technology; Social Services; Transportation), 6 ACT Career Clusters, and the 16 USED/OVAE CPAs.

Career Cluster Frameworks. Hartford: Division of Educational Programs and Services, Connecticut State Department of Education, June 1998. <http://www.state.ct.us/sde/deps/Clearns/resources/career.pdf>

Connecticut School-to-Career Systems includes eight Career Clusters (Arts & Media; Business & Finance; Construction Technologies & Design; Environmental, Natural Resources & Agriculture; Government, Education & Human Services; Health & Biosciences; Retail, Tourism, Recreation & Entrepreneurship; Technologies: Manufacturing, Communications & Repair), integrating academic standards (linked Connecticut's Common Core of Learning) with technical and employability standards specific to each cluster.

Career Clusters Homepage. Washington, DC: Office of Vocational and Adult Education, U.S. Department of Education, 2002. <http://www.ed.gov/offices/OVAE/clusters/index.html>

Identifies and briefly explains the 16 USED/OVAE CPAs: Agriculture & Natural Resources; Architecture & Construction; Arts, A/V Technology & Communication; Business & Administration; Education & Training; Finance; Health Services; Hospitality & Tourism; Human Services; Information Technology; Law & Public Safety; Manufacturing; Government & Public Administration; Retail/wholesale Sales & Service; Scientific Research/engineering; Transportation, Distribution & Logistics. Links to sample occupations for all clusters and to sites for selected clusters.

Career Pathways. Concord: Bureau of Career Development, New Hampshire Department of Education, 2002a. <http://www.ed.state.nh.us/SchoolToWork/career2.htm>

Explains and defines *career pathways* and how they can be implemented in line with school-to-work principles; provides mini-case studies of schools.

Career Pathways. Springfield, VT: River Valley Technical Center, 2002b. http://www.rvtc.org/RVTC/Day_Classes/day_classes.htm Explains the purpose and nature of River Valley's eight career pathways: Construction Trades; Engineering Careers; Graphics Communications; Horticulture and Natural Resources; Hospitality & Tourism; Human Services; Information Technology; Protective Services. Links to descriptions of pathways, programs in pathways, and courses in programs.

CareerZone. Albany: New York State Department of Labor, n.d. <http://www.nycareerzone.org>

Career exploration and planning system provides information on 900 occupations from the O*NET database. Students can browse occupational information in six Career Clusters (Arts & Humanities; Business & Information Systems; Engineering & Technologies; Health Services; Human & Public Services; Natural & Agricultural Services) or can do a self-assessment to determine their preferences in six broad Interest Areas (Realistic; Investigative; Artistic; Social; Enterprising; Conventional).

Century Gold: Corporate Publication of Century Career Center. Logansport, IN: Century Career Center, Winter 2001-02.

Career centers programs and curricula organized into eight Schools, or career clusters: Business; Construction Technology; Engineering & Engineering Technology; Health & Human Services; Information Technology; Manufacturing Technology; Mechanical Repair; Transportation Technology.

COP Developments. Lexington: Massachusetts Center for Career and Technical Education, 2002. <http://www.mccte.org/links/cop.html>

Identifies seven Career Clusters (Arts & Communication; Business, Finance & Marketing; Construction & Design; Environmental, Natural Resources & Agricultural Sciences; Health Services & Human Services; Hospitality, Tourism & Recreation; Technology & Engineering) related to the Certificate of Occupational Proficiency (COP); links to pages crosswalking clusters with Classification of Instructional Program (CIP) codes and program descriptions, with information on number and level of programs and number of enrollees.

CTE Program Descriptions: Alphabetically by Program Cluster. Montpelier: Career and Workforce Development, Vermont Department of Education, 2002. <http://www.state.vt.us/educ/cwd/cte/ctetcpmsbyclusters.html>

Describes Vermont's 17 career clusters: Agriculture & Natural Resources; Construction; Manufacturing; Logistics, Transportation & Distribution; Information Technology Services; Wholesale/Retail Sales & Service; Financial Services; Hospitality & Tourism; Business & Administrative Services; Health Services; Human Services; Arts & Communications Services; Legal & Protective Services; Scientific Research, Engineering & Technical Services; Education & Training Services; Public Administration/Government Services; and Pre-Tech. Links to descriptions of individual programs within clusters and to technical centers and high schools offering programs.

Guide to Selecting Career Clusters and Career Majors in Kentucky. Frankfort: Kentucky Department of Education, 2002. http://www.kde.state.ky.us/osis/voced/selecting_clusters.asp

Editor's guide to Kentucky's 14 recognized career clusters (Agriculture; Arts & Humanities; Business & Marketing; Communications; Construction; Education; Health; Human Services; Information Technology; Manufacturing; Public Services; Science & Mathematics; Social Sciences; Transportation), used for career awareness, exploration, and guidance and for planning and completing a career major (focused program of study); alignment with postsecondary degrees, diplomas, certificates, and related occupations.

High School Course Selection Guide, 2002-03. Manteca, CA: Manteca Unified School District, 2002.

Guidebook for three district high schools identifies professional and skilled occupations in eight Career Paths: Agriculture; Arts, Media & Entertainment; Business; Engineering Technology; Health Careers; Home Economics Careers & Technology; Industrial Technology; Public and Human Service. Organizes information on required and elective courses.

Loesch-Griffin, D., and Rye, A. **School-to-Careers: Report on the Year 4 Evaluation of Nevada's STC Implementation System.** Carson City: Nevada School-to-Career State Council, 2001. (ED 457 331) <http://www.nevada.edu/stc/fullyr4.pdf>

Among the findings was evidence that Career Pathways provided all students with a focus for career and academic goals.

McLain, B., and Thompson, M. **Educational Opportunities in Washington's High Schools under State Education Reform: Case Studies of Eight Washington High Schools.** Vol. 3. Olympia: Washington State Institute for Public Policy, 2001. (ED 460 224) <http://www.wsipp.wa.gov/education/pdf/HighSchoolIII.pdf>

Among other findings, use of Career Pathways varied widely across the eight high schools studied.

Michigan's Career Pathways. Lansing: Michigan Occupational Information System, 2002. <http://www.mois.org/pathways>

Demonstration of Michigan Occupational Information System products organizing occupations into six clusters: Arts & Communication; Business, Management, Marketing & Technology; Engineering/Manufacturing & Industrial Technology; Health Services; Human Services; Natural Resources & Agriscience. Links to information on pathways, high school training programs or courses, and careers in the pathway.

Occupational Guides by Interest Area. Sacramento: Labor Market Information Division, California Employment Development Department, 2000. http://www.calmis.ca.gov/file/occguide/2_INDEX.htm

About 300 occupations grouped into 12 Interest Areas: Artistic; Scientific; Plants & Animals; Protective; Mechanical; Industrial; Office; Selling; Personal Service; Social Service; Professional & Managerial; Physical Performing; Medical or Health. Links to Occupation Guides providing statewide information on each occupation.

Rudy, D. W., and Rudy, E. L. **Report on Career Pathways: A Success Story in Berrien County, Michigan.** New Buffalo, MI: Lakehouse Evaluation, 2001. (ED 457 408)

Evaluation found positive outcomes of local implementation of Michigan's Career Preparation System involving six Career Pathways: Arts & Communication; Business, Management, Marketing & Technology; Engineering/Manufacturing & Industrial Technology; Health Services; Human Services; Natural Resources & Agriscience.

Winnisquam Regional High School Academic Career Planner: Program of Studies, Vol. 1, 2002-2003. Tilton, NH: Winnisquam Regional High School, 2002.

Identifies Winnisquam's six Career Clusters: Agriculture, Environment & Natural Resources; Arts, Humanities & Communication; Business Services & Commerce; Engineering, Manufacturing & Technology; Social and Human Services; Health Care & Ancillary Services. Provides academic and occupational information for each cluster.

Wonacott, M. E. **Career Clusters. Highlight Zone: Research @ Work No. 6.** Columbus: National Dissemination Center for Career and Technical Education, the Ohio State University, 2001. <http://www.nccte.org/publications/infosynthesis/highlightzone/highlight06/index.asp>

Explains the theory underlying career clusters and implications for practitioners; gives details of 4 state Career Cluster frameworks (Utah, Oregon, Ohio, Indiana), the 16 USED/OVAE CPAs, and the 15 National Skill Standards Board Industry Sectors; identifies information and materials available through those Career Cluster frameworks.

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